

A CATALOGUE OF THE BUTTERFLIES KNOWN TO OCCUR IN INDIANA.

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So far as can be ascertained no attempt has heretofore been made to catalogue the Diurnal Lepidoptera, or Butterflies, found in Indiana. Quite a number of persons have collected in various counties of the State, yet, as far as known, but two local lists have been published. One, "A List of the Butterflies of Decatur County, Indiana," by W. P. Shannon, was read by title before the Academy of Science, at Indianapolis, in December, 1887, and hectograph copies were afterward distributed by the author. The list contained the names of forty species, taken in the county mentioned. The other list was prepared by the present writer, and published in the *Hoosier Naturalist*, of November and December, 1886, under the title of "Some Southern Indiana Butterflies." It contained the names of, and brief notes concerning, fifty-three species taken in Monroe and Brown counties. Since 1886 the writer has collected more or less each season in various parts of the State, especially in Putnam, Wabash and Vigo counties, where a number of interesting and rare species have been taken. During my study of butterflies I have often felt the need of a catalogue of those species known to occur in the State, and believing that such a work would be of some value to future collectors, the present paper has been prepared. It comprises 108 species that have been taken within the boundaries of the State—no species being included except upon good authority. Of these, 81 are in the writer's collection, and were taken in the counties above mentioned, or in Lagrange, Kosciusko or Montgomery counties.

The remaining 27 species are in the collections of W. H. Edwards, of Coalburg, West Virginia; S. G. Evans, of Evansville, Indiana; C. E. Worthington, of Chicago, Illinois; or Geo. C. Hubbard, of Madison, Indiana. Mr. Edwards, who is one of the leading authorities upon butterflies in the United States, has received specimens from several persons in the State, chief among whom are the late Dr. G. M. Levette, of Indianapolis, and W. C. Gallagher, of Ross, and he kindly furnished me a list of those in his collection from Indiana.

Mr. Evans has one of the finest private collections in the State, and has taken several species in Vanderburgh County, which have not been taken elsewhere within our limits, among them the large and beautiful *Argynnis diana*. Mr. Worthington has collected extensively in Lake County, where many rare species occur, and his list and notes have added materially to the value of the catalogue. To the above named gentlemen, as well as to a number of others from whom information was derived, which is duly acknowledged in the proper places, my especial thanks are due.

It will be seen that the counties mentioned, in addition to those of Gibson, Randolph and Fayette, from which lists have been received, represent fairly well all portions of the State; yet twenty-three additional species are given in Mr. Edward's Catalogue of the Butterflies of North America, whose range includes or approaches Indiana, but which, as far as known, have not been taken within our limits, and, therefore, are not included in the present catalogue. Moreover, the known distribution within the State of a number of the species taken is much more limited than it should be; hence additions to the catalogue, as well as information with regard to extension of range within the State, are earnestly requested and will be duly acknowledged.

To make the catalogue as valuable as possible to future collectors, not only has the known range of each species within the State been given, but also its favorite place of resort and the season at which it is most abundant, together with any other information regarding variation or habits which it was thought would be of interest. Prof. G. H. French in his manual of "The Butterflies of the Eastern United States," has treated of the habits of the larvæ of most of the species, but has said but little about the habits of the mature insects. To the student of Indiana butterflies this catalogue will perhaps serve as an accessory to French's work, and hence little or nothing is said of the larvæ.

The nomenclature adopted is that of Edward's "Revised Catalogue of the Diurnal Lepidoptera of America North of Mexico," published in the Transactions of the American Entomological Society for 1884. The number in parenthesis before each name is that of the species in the catalogue cited.

Finally, I have thought it best to include the synonymy of each of the species which is treated of in the works which the student of Indiana butterflies will be most likely to possess and to which I have had access in preparing the catalogue. Those works are the following:

Edwards, W. H.—"Butterflies of North America." Volumes I and II.

French, G. H.—"Lepidoptera, or Butterflies and Moths," in the Seventh Report of the State Entomologist of Illinois, 1878. The Butterflies of the Eastern United States, 1886.

Harris, Dr. T. W.—A Treatise on some of the Insects Injurious to Vegetation. Third Edition, 1862. (Of the 54 species of butterflies described in this most excellent work, 51 have been found in Indiana.)

Mead, T. L.—“Report upon the Collection of Diurnal Lepidoptera,” in the Report of the Wheeler Survey, V. 1875.

Morris, J. G.—Synopsis of the Described Lepidoptera of North America, 1862.

Packard, A. S.—Guide to the Study of Insects, Eighth Edition, 1883.

Riley, C. V.—Report of the Entomologist, in the United States Agricultural Report for 1883.

Scudder, Samuel H.—The Butterflies of the Eastern United States and Canada. Volumes I, II and III. 1889. (Volume III contains the plates.)

Thomas, Cyrus H.—“Cabbage Insects;” in the Ninth Report of the State Entomologist of Illinois, 1880.

Wood, J. G.—“Insects at Home,” 1873.

Blatchley, W. S.—“Some Indiana Butterflies,” in *Indiana Farmer*, Vols. 21 and 22.

“Some Southern Indiana Butterflies,” in *Hoosier Naturalist*, November and December, 1886.

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PAPILIONIDÆ.

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PAPILIO, Linnæus.

1. (1.) *PAPILIO AJAX*, L. Ajax Butterfly. The Zebra Swallow-tail.
Papilio ajax, Morris, Lep. N. A., 1862, 8, 351. (Form *walshii*,
 Edw.)
 Edwards, But. N. A., I, 1871, pls. 1, 2, 3. (All
 forms.)
 French, Sev. Rep. St. Ent. Ill., 1878, 135.
 Id., But. E. U. S., 1886, 84. (All forms.)
 Blatchley, *Indiana Farmer*, Oct. 9, 1886.
Iphiclides ajax, Scudder, But. E. U. S. and Can., 1889, II, 1264;
 III, pls. 15, 26, 66, 76, 85.
Papilio marcellus, Morris, Lep. N. A., 1862, 9. (Form *marcellus*,
 Bd.)

The three forms, *walshii*, Edw ; *telamonides*, Feld., and *marcellus*, Bd., are doubtless found throughout the State. All have been taken by the writer in Monroe and Vigo counties. Of the three, *marcellus* is much the more common, *walshii* being comparatively scarce, though Edwards, loc. cit. p. 9, says "that Dr. G. M. Levette has taken it abundantly in the month of April near Indianapolis." The food plant is pawpaw. The butterfly frequents open woods and winters in chrysalid.

2. (2.) *PAPILIO PHILENOR*, L. The Philenor Butterfly. The Blue Swallow-tail.

Papilio philenor, Morris, Lep. N. A., 1862, 6.

French, Seventh Rept. State Ento. of Ill., 1878, 136.

Id., But., E. U. S., 1886, 86, figs. 11, 12, 13.
Packard, Guide to Study of Insects, 8th ed., 1883, 248.

Blatchley, Ind. Farm., Oct. 9, 1886.

Lærtias philenor, Scudder, But. E. U. S. and Can., 1889, II, 1241; III, pls. 16, 26, 66, 76, 85.

Throughout the State. The larvæ are said to feed upon the different species of *Aristolochia*, or pipe vine, but the plants of that genus are rare in Indiana, whereas the butterfly is a common one, hence there must be some other food plant. Found from May 1, to September 20, in open woods and pastures. According to Riley, another food plant of the larvæ is *Asarum canadense*, or wild ginger, a common plant on rich hill-sides in Indiana.

3. (12.) *PAPILIO ASTERIAS*, Fab. The Asterias Butterfly. The Black Swallow-tail.

Papilio asterias, Morris, Lep. N. A., 1862, 5.

Harris, Insects Injur. to Veg., 3d Ed., 1862, 265, Pl. IV.

French, Seventh Rept. State Ento. of Ill., 1878, 137.

Id., But. E. U. S., 1886, 89. Figs. 14, 15, 16.
Packard, Guide. 8th Ed., 1883, 245.

Blatchley, Ind. Farm., Oct. 9, 1886.

Papilio polyxenes, Scudder, But. E. U. S. and Can., 1889, II, 1353; III, pls. 8, 27, 66, 76, 85.

This handsome *Papilio* inhabits all parts of the State, but next to *P. cresphontes* is the least common member of the genus found with us. Its larva is the well-known carrot or parsnip worm found on the various wild and cultivated species of *Umbelliferae*.

The butterfly is most common in July and August, in open woods, especially those containing thistles. It winters in the chrysalid, the first ones appearing about May 15.

4. (13.) *PAPILIO TROILUS*, L. The Troilus Butterfly. The Green Clouded Swallow-tail.

Papilio troilus, Harris, Ins. Inj. to Veg., 1862, 3d Ed., 266.

Morris, Lep. N. A., 1862, 5

French, Sev. Rep. State Ento. of Ill., 1878, 138.

Id., But. E. U. S., 1886, 93.

Packard, Guide, 8th Ed., 1883, 247.

Blatchley, Ind. Farmer, Oct. 9, 1886.

Euphœades troilus, Scudder, But. E. U. S. and Can., 1889, II, 1313; III, pls. 8, 27, 66, 76, 85.

The larvæ of this species feed upon the leaves of the sassafras, *Sassafras officinale*, Nees, and the spice bush, *Lindera Benzoin*, Bl., and the butterfly is common wherever those plants are found. There are two broods each season, and the winter is passed in the chrysalis state.

It frequents roadsides and open pastures in company with *P. philenor*, and may be taken from May 1 to Oct. 10.

Specimens are frequently taken which expand four inches, and many have the inner row of spots on upper surface of hind wings obsolete. The orange anal spot of this row is, however, always present.

5. (15.) *PAPILIO TURNUS*, L. The Turnus Butterfly. The Tiger Swallow-tail.

Papilio turnus, Harris, Ins. Inj., 1862, 268, figs. 97, 98.

Morris, Lep. N. A., 1862, 2.

French, Sev. Rep. State Ento. Ill., 1878, 139.

Id., But. E. U. S., 1886, 97, figs. 17, 18, 19.

Edwards, But. N. A., II. 1884, 7, pls. 3, 4, 5.

(All forms.)

Packard, Guide, 8th Ed., 1883, 247.

Blatchley, Ind. Farmer, Oct. 9, 1886.

Jasoniades glaucus, Scudder, But. E. U. S. and Can., 1889, II, 1288; III, pls. 8, 13, 26, 66, 76, 85.

Papilio glaucus, Morris, Lep. N. A., 1862, 2.

(Dimor. form *glaucus*, L.)

Frequent in all parts of the State from May 15 till October. In May and June it is often seen in the vicinity of streams and along the borders of thickets; later on it is more abundant about thistle patches in open woods. The larvæ feed upon a number of plants, chief among which are: ash, tulip or poplar, cherry, apple, and the various species of *Craetagus* or hawthorne. The dimorphic female form, *glaucus*, L., is southern in its range, but has been taken in the State as far north as Kosciusko County. It is usually rare where found, no more than one or two specimens having been seen or taken in any one locality, except in the vicinity of Evansville, Vanderburgh County. Of its distribution

there Mr. Evans says: "It is quite common, and presents many curious examples of black and yellow blended and mixed in the same insect. I took one in which the left wing and half body were yellow, and the right, black. I saw another last season that seemed to be equally black and yellow, the two colors being almost evenly distributed over the whole insect. There are about half as many *glaucus* as *turnus* in the county." In Indiana *turnus* is double brooded and winters in the chrysalis.

6. (20.) *PAPILIO CRESPHONTES*, Cram. The Cresphontes Butterfly.
The Giant Swallow-tail.

Papilio cresphontes, French, Sev. Rep. St. Ent. Ill., 1878, 139.

Id., But. E. U. S., 1886, 101, figs. 20, 21, 22.

Heraclides cresphontes, Scudder, But. E. U. S. and Can., 1889,
II, 1334; III, pls. 14, 27, 66, 76, 85.

Papilio thoas, Morris, Lep. N. A., 1862, 7.

This is our largest and rarest *Papilio*. Its range, as given by Edwards, is "Southern and Western States, but moving east and north." It is reported as rare by most of the persons who have sent in lists. During the six years which the writer has collected in the State he has seen but two living specimens, one in Montgomery, the other in Wabash County. The food plants of the larvæ, *Ptelea trifoliata*, L., and *Xanthoxylum Americanum*, Mill (Hop tree and Prickly Ash), are not rare in Monroe and Vigo Counties, yet the butterfly has not been seen in either, although a constant outlook has been kept for it. Where found it is usually near streams, and flies swiftly and high in air, thus rendering its capture difficult.

PIERINÆ.

PIERIS, Schrank

7. (35.) *PIERIS PROTODICE*, Bd.-Lec. The Southern Cabbage Butterfly. The Chequered White.

Pieris protodice, Morris, Lep. N. A., 1862, 17, 317.

Packard, Ninth Rep. U. S. Geol. and Geog.
Survey, 1877, 750.

Id., Guide, 8th Ed., 1883, 249.

French, Sev. Rep. St. Ent. Ill., 1878, 141, figs.
32, 33.

Id., But. E. U. S., 1886, 107, figs. 23, 24, 25.

Thomas, Ninth Rep. St. Ent. Ill., 1880, 25, 33.

Riley, U. S. Agr. Rep., 1883, 114, pl. X, figs. 2,
3, 4.

Blatchley, Ind. Farmer, Oct. 9, 1886.

Id., Hoos. Nat. II, Nov., 1886, 42.

- *Pontia protodice*, Scudder, But. E. U. S. and Can., 1889, II, 1163; III, pls. 7, 16, 26, 65, 76, 84.

The two forms of this species, *protodice*, Bd.-Lec. and *vernalis*, Edw., are found all over the State, but they are much less common than *P. rapæ*, L. It has almost the same habits as the latter, but is more often found at a distance from cultivated grounds. It winters in the pupa state, first appearing as imago about April 15, and may be taken as late as November 1. Food, plants, cabbage, turnip and sweet alyssum. There are three broods each season, and in Vigo County, in the spring of 1891, large numbers of the first brood were seen mating on April 18.

8. (36.) *PIERIS NAPI OLERACEA-AESTIVA*, Harris. The Turnip Butterfly. The Gray Veined White.

Pontia oleracea, Harris, Ins. Inj., 1862, 270, fig. 99.

Pieris oleracea, Harris, Morris, Lep. N. A., 1862, 19.

Scudder, Morris, loc. cit., 315.

French, Sev. Rep. State Ento. Ill., 1878, 143.

Thomas, Ninth Rept. State Ento. Ill., 1880, 26.

Packard, Guide, 8th Ed., 1883, 249, fig. 182.

Riley, U. S. Agr. Rept., 1883, 115, pl. X, fig. 5.

Scudder, But. E. U. S. and Can., 1889, II, 1191; III, pls. 7, 13, 26, 65, 76, 84.

Pieris napi oleracea-aestiva, French, But. E. U. S., 112.

This species of many names is represented sparingly in the northern part of the State by the above named variety, the range of which is given by Edwards as New York to Michigan.

Specimens in the writer's collection were taken by Mr. A. B. Ulrey in Kosciusko County, in the summer of 1890. Food plants—cabbage, turnip, radish, etc.

9. (38.) *PIERIS RAPÆ*, L. The Cabbage Butterfly.

Pieris rapæ, Packard, Ninth. Rept. U. S. Geol. and Geog. Survey of the Terr., 1877, 746, fig. 18.

French, Sev. Rept. State Ento. Ill., 1878, 144.

Id., But. E. U. S., 1886, 114, figs. 28, 29, 30.

Thomas, Ninth Rept. State Ento. Ill., 1880, 8, 31, figs. 1, 2.

Riley, U. S. Agr. Rept., 1883, 108, pl. I.

Blatchley, Ind. Farmer, Oct. 9, 1886.

Scudder, But. E. U. S. and Can., 1889, II, 1205; III, pls. 7, 16, 65, 76, 84.

Found in large numbers throughout the State, and is our most injurious butterfly, the larvæ literally destroying the cabbage crop in many localities. It winters in the pupa state and the first ones appear about April 1, from which date until heavy frosts it may be taken. It is most abundant in Central Indiana, about July 1, when the second brood appears. In the southern part of the State a third brood appears about September 10, the pupæ of which survive the winter. In this country *P. rapæ* is preyed upon by one dipterous parasite, *Exoriste hirsuta*; and by two hymenopterous parasites, *Pteromalus puparum* and *Apanteles glomeratus*. Sometimes as many as one hundred eggs of one of these parasites are deposited within the body of a single caterpillar, and the number of larvæ of *P. rapæ* which they prevent from reaching the perfect state, during a single season, is an enormous one.

NATHALIS, Boisduval.

10. (39.) NATHALIS IOLE, Bd.

Nathalis iole, Morris, Lep. N. A., 1862, 22.

Mead, Rep. Wheeler Exp., V. 1875, 747.

French, But. E. U. S., 1886, 116, fig. 31.

Scudder, But. E. U. S. and Can., 1889, III, 1842.

Nathalis irene, (Fitch), Morris, Lep. N. A., 1862, 22, 351.

This butterfly has been taken only in Jefferson, Lake and Vanderburgh counties. In the latter Mr. Evans reports it as found only one season in November. Its range as given by Edwards is "Illinois, Missouri and westward." Food plant of larva unknown.

ANTHOCHARIS, Boisduval.

11. (43.) ANTHOCHARIS OLYMPIA, Edw.

Anthocharis olympia, Edw. But. N. A., II, 1884, 77, pl. 16.

French, But. E. U. S., 1886, 117.

Synchlœ olympia, Scudder. But. E. U. S. and Can., 1889, III, 1844.

Occurs in small numbers about Whitings, Lake County, during the first half of May, where it has been taken by Mr. Chas. E. Worthington, of Chicago. It frequents cultivated grounds, gardens and meadows. Food plant, unknown.

12. (53.) ANTHOCHARIS GENUTIA, Fab. The Falcate Orange-tip.

Anthocharis genutia, Morris, Lep. N. A., 1862, 20.

Edwards, But. N. A., II, 1884, 83, pl. 17.

French, But. E. U. S., 1886, 118.

Scudder, But. E. U. S. and Can., 1889, II, 1147; III, pls. 15, 26, 65, 76, 84.

Vanderburgh County, by Evans. "This pretty species is single brooded and flies in spring. The eggs are laid upon the species of *Cardamine* and other *Cruciferae*, but the life history of the larvæ is not well known. It flies low and swiftly, with a peculiar tremulous motion, and is readily distinguished from other Pierids by its flight as well as by the conspicuous coloring of the male." EDWARDS, loc. cit.

CALLIDRYAS, Boisduval.

13. (54.) *CALLIDRYAS EUBULE*, Linn. The Danewort Butterfly.
The Cloudless Sulphur.

Callidryas eubule, Morris, Lep. N. A., 1862, 25.

French, Sev. Rep. St. Ento. III., 1878, 147.

Id., But. E. U. S., 1886, 119.

Scudder, But. E. U. S. and Can., 1889, II,
1053; III, pls. 15, 25, 65, 76, 84.

A beautiful butterfly, whose range is southern, and which is reported only from Vanderburgh County, where Mr. Evans takes from one to a half dozen almost every season, in open woods during July and August. Food plant, the different species of *Cassia* or Wild Senna.

14. (56.) *CALLIDRYAS PHILEA*, L.

Callidryas philea, Morris, Lep. N. A., 1862, 350.

(Note by W. H. Edwards.)

French, But. E. U. S., 1886, 124.

Scudder, But. E. U. S. and Can., 1889, III,
1833.

A single specimen of the above species has been taken in Jefferson County by Mr. Hubbard. It has been reported heretofore only from Texas, Illinois and Wisconsin.

COLIAS, Fabricius.

15. (62.) *COLIAS CAESONIA*, Stoll. Dog's Head Butterfly.

Colias caesonia, Morris, Lep. N. A., 1862, 27.

French, But. E. U. S., 1886, 127, fig. 32.

Zerene caesonia, Scudder, But. E. U. S. and Can., 1889, III,
1836.

This beautiful *Colias* has been taken only along the western border of the State. It is reported as frequent in Vanderburgh and Lake counties. In Vigo County, in the latter half of October, 1887, three or four specimens were taken from the vicinity of ponds in the Wabash River bottoms, but it has not been seen since. The larvæ feed upon clover, and false indigo, *Amorpha fruticosa* L.

The females, which are on the wing in late autumn, have the under side of the hind wings much more deeply suffused with red than do those which fly earlier in the season.

16. (66.) *COLIAS EURYTHEME*, Bd. The Eurytheme Butterfly. The Orange Sulphur.

Colias eurytheme, Morris, Lep. N. A., 1862, 29.

Edwards, But. N. A., I, 1869, 45, pl. 14.

Id., But. N. A., II, 1884, 103, pl. 21. (All forms.)

Mead, Rep, Wheeler Exp., v. 1875, 748.

French, Sev. Rep. St. Ento. III, 1878, 147.

Id., But. E. U. S., 1886, 128. (All forms.)

Blatchley, Ind. Farmer, Oct. 9, 1886.

Eurymus eurytheme, Scudder, But. E. U. S. and Can., 1889, II, 1126; III, pls. 15, 25, 65, 76, 84.

Colias keewaydin, Edw., But. N. A., I, 1869, 49, pl. 15.

Colias amphidusa, Morris, Lep. N. A., 1862, 29.

Colias edusa, Id., loc. cit., 27.

Colias chrysotheme, Id., loc. cit., 28.

The two forms, *eurytheme*, Bd., and *keewaydin*, Edw., occur occasionally in various parts of the State, but are nowhere common. *Keewaydin* was taken by the writer in Monroe County, in 1887, and *eurytheme* in Putnam County in 1890.

It winters, according to Edwards, in both imago and pupa stage, frequents meadows and roadsides, and is most common in July. Food plant, white and buffalo clover.

17. (68.) *COLIAS PHILODICE*, Godt. The Sulphur Yellow Butterfly.

Colias philodice, Harris, Ins. Inj. to Veg., 1862, 272, figs. 100-102.

Morris, Lep. N. A., 1862, 29.

French, Sev. Rept. State Ento., III., 1878, 147.

Id., But. E. U. S., 1886, 133.

Packard, Guide, 8th Ed., 1883, 250.

Edwards, But. N. A., II, 1884, 93, pls. 19, 20.

Blatchley, Ind. Farmer, 1886, Oct. 9.

Eurymus philodice, Scudder, But. E. U. S. and Can., 1889, II, 1111; III, pls. 7, 13, 25, 65, 76, 84.

This is, without doubt, the most common butterfly in the State, being found in abundance from April 10 to November. In May and June they frequent fields of clover, upon which plant the larvæ feed, but later on they congregate by hundreds about muddy places in the roads, and along streams. The white female form is often seen, but is much less common than the yellow.

The species varies greatly, and that young collectors may not look upon some of its forms as distinct species, I quote the following, slightly modified, from Edwards, loc. cit., p. 97: "They vary in size from an expanse of 1.3 to 2.6 inches; in color, from pale sulphur to lemon and bright yellow; in the breadth of the black border from .1 to .3 inches; in the size and shape of discal spot on primaries and secondaries; in the color of the under surface, and in the row of extra discal spots beneath, from a complete series across both wings to none at all." Hibernates usually as pupa, but sometimes as larva. There are three broods each season, the first of which, in Central Indiana, appears about April 25, the other two in the latter half of June and August, respectively. A few individuals have been seen on the wing, in Vigo County, as late as November 5.

TERIAS, Swainson.

18. (86.) *TERIAS NICIPPE*, Cram. The Nicippus Butterfly. The Black-bordered Yellow.

Terias nicippe, Morris, Lep. N. A., 1862, 33.

French, Sev. Rept. State Ent. Ill., 1878, 148.

Id., But. E. U. S., 1886, 136, fig. 33.

Xanthidia nicippe, Scudder, But. E. U. S. and Can., 1889, II, 1066; III, pls. 15, 26, 65, 76, 84.

Throughout the southern half of the State, but not seen by the writer, nor reported farther north than Vigo and Fayette counties. Quite frequent where found, and especially so in October along sandy banks where the food plants of the larva, the various species of *Cassia*, or Wild Senna, are abundant. Specimens on the wing have been seen in the city of Terre Haute as late as November 18, and it probably hibernates as a butterfly.

19. (90.) *TERIAS LISA*, Bd.-Lec. The Lisa Butterfly. The Little Sulphur.

Terias lisa, Morris, Lep. N. A., 1862, 34.

French, Sev. Rep. State Ento. Ill., 1878, 148.

Id., But. E. U. S., 1886, 139.

Eurema lisa, Scudder, But. E. U. S. and Can., 1889, II, 1087; III, pls. 7, 15, 26, 65, 76, 84.

Although this little *Terias* is said by French, in the Seventh Ill. Report, loc. cit., to be "one of the most common butterflies that flits along roads and over moist places during the summer and fall in Southern Illinois," yet in Indiana it has been noted only in Decatur, Lake and Vanderburgh counties, in the latter of which Mr. Evans takes "a few each season." Food plant, clover and *Cassia*.

NYMPHALIDÆ.

DANAINÆ.

DANAIS, Latreille.

20. (94.) DANAIS ARCHIPPUS, Fab. The Milkweed Butterfly. "The Monarch.

Danais archippus, Harris, Ins. Inj., 1862, 280.

Morris, Lep. N. A., 1862, 38.

French, Sev. Rep. State Ent. Ill., 1878, 149.

Id., But. E. U. S., 1886, 144, figs. 36-39.

Packard, Guide, 8th Ed., 1883, 251.

Blatchley, Ind. Farm., 1886, Oct. 30.

Anosia plexippus, Scudder, But. E. U. S. and Can., 1889, I, 720; III, pls. 1, 16, 18, 64, 74, 83, 87.

One of the largest and most common butterflies throughout the State. Most abundant about June 1 and September 10, when the two broods of the season, respectively, come forth. A few faded individuals may be seen in April as the imago hibernates. This is one of the few species the members of which flock together at certain periods, usually about September 20. These swarms seem to be composed almost wholly of males, and in Indiana gather about the leaves and branches of beech trees. The reasons for these gatherings are, up to the present, unknown. Food plants of larvæ, the various species of milkweed (*Asclepias*).

NYMPHALINÆ.

AGRAULIS, Boisduval and LeConte.

21. (100.) AGRAULIS VANILLÆ, Linn.

Agraulis vanillæ, Morris, Lep. N. A., 1862, 40.

French, But. E. U. S., 1886, 148.

Scudder, But. E. U. S. and Can., 1889, III, 1814.

A handsome species, which inhabits the Southern States, and has been taken in Indiana only in Vanderburgh County.

The food plant of larvæ is the beautiful Southern Passion Flower, *Passiflora incarnata*, L. Those found in this State doubtless fed upon the allied species, *Passiflora lutea*, L.

ARGYNNIS, Fabricius.

22. (101.) ARGYNNIS IDALIA, Drury. The Idalia Butterfly. The Regal Fritillary.

Argynnis idalia, Harris, Ins. Inj., 1862, 285, fig. 110.

Morris, Lep. N. A., 1862, 41.

French, Sev. Rep. St. Ento. Ill., 1878, 149.

Id., But. E. U. S., 1886, 150.

Blatchley, Ind. Farmer, 1886, Nov. 6.

Speyeria idalia, Scudder, But. E. U. S. and Can., 1889, I, 535;
III, pls. 4, 12, 21, 64, 75, 84.

This fine species is known to occur in but four counties in the State, viz., Monroe, Vanderburgh, Fayette and Lake.

It emerges from the chrysalid formed by the hibernating larva about July 1, and frequents meadows and low grounds near streams. Its larvæ, as well as the larvæ of all other members of the genus, feed upon the different species of wild and cultivated violets.

23. (102.) ARGYNNIS DIANA, Cram. The Diana Butterfly.

Argynnis diana, Morris, Lep. N. A., 1862, 42. (Male only.)

Edwards, But. N. A., I, 1868, 63, pl. 20.

Id., But. N. A., II, 1884, 148, pl. 29. (Preparatory stages.)

French, Sev. Rep. State Ento. Ill., 1878, 149.

Id., But. E. U. S., 1886, 153.

Semnopsyche diana, Scudder, But. E. U. S. and Can., 1889, III, 1799.

This large and beautiful *Argynnis* is a southern species, ranging from West Virginia through Kentucky and Tennessee to Arkansas, but is nowhere common. Mr. S. G. Evans, of Evansville, Ind., has, however, collected them in the vicinity of that city every season for ten or twelve years. He takes them from the middle of June to the middle of August, from upland meadows and borders of woods. This is, as far as known, the most northern station at which the species has been found, and is its only record in the State. Like the other members of its genus, it is single brooded, the larvæ feeding on violets and hibernating.

24. (107.) ARGYNNIS CYBELE, Fab. The Cybele Butterfly. The Great Spangled Fritillary.

Argynnis cybele, Morris, Lep. N. A., 1862, 42.

Edwards, But. N. A., I, 1868, 67, pl. 21.

French, Sev. Rept. State Ent. Ill., 1878, 150.

Id., But. E. U. S., 1886, 155.

Blatchley, Ind. Farm., 1886, Nov. 6.

Scudder, But. E. U. S. and Can., 1889, I, 554;
III, pls. 4, 21, 64, 75, 84.

Next to *Colias philodice*, Godt., this is the most common butterfly in Indiana from May 20 until September. In any clover field in June vast numbers may be seen gathering honey and chasing one another from bloom to bloom. In July and August they are to be found wherever there are thistles and ironweeds. During the latter month the eggs are laid, and by the middle of September the butterfly has almost wholly disappeared. The larvæ pass the winter beneath sticks and pieces of bark in the vicinity of the food plant.

25. (108.) ARGYNNIS APHRODITE, Fab. Aphrodite Butterfly. The Silver Spot Fritillary.

Argynnis aphrodite, Harris, Ins. Inj., 1862, 285, fig. 111.

Morris, Lep. N. A., 1862, 43.

Edwards, But. N. A., I, 1868, 71, pl. 22.

French, Sev. Rep. St. Ento. Ill., 1878, 150.

Id., But. E. U. S., 1886, 157, fig. 40.

Packard, Guide, 8th Ed., 1883, 253, fig. 183.

Scudder, But. E. U. S., 1889, I, 563; III, pls. 4, 12, 21, 64, 72, 84.

A. aphrodite has been noted in but five counties, but probably occurs throughout the State, being confounded with *cybele*, which it closely resembles. It may, however, be easily told from that species by the following characters:

Smaller size; less brown on the bases of the upper side of wings; narrower pale band near outer margin of under side of hind wings; narrower space between black bands on outer margin of fore wings above; and deeper tint of ground color, approaching a red. It frequents the same localities as *A. Cybele*, and is most abundant, where found, from June 25 till August.

26. (109.) ARGYNNIS ALCESTIS, Edw. Alcestis Butterfly.

Argynnis alcestis, French, Sev. Rep. St. Ento. Ill., 1878, 150.

Id., But. E. U. S., 1886, 158.

Blatchley, Ind. Farm., Nov. 6, 1886.

Id., Hoos. Nat., II., Nov. 1886, 42.

Scudder, But. E. U. S. and Can., III, p. 1802.

In Indiana this species has been collected in but two counties—Lake, where Worthington reports it as common; and Monroe, where a single specimen was taken from a meadow July 1, 1886. From above it closely resembles *A. cybele*, but on the under side the hinder wings are dark cinnamon brown, without a submarginal yellow band.

It is probably quite common on the prairies in the northern part of the State, and has been overlooked heretofore.

27. (112.) ARGYNNIS ATLANTIS, Edw. The Mountain Silver-spot.
Argynnis atlantis, Edwards, But. N. A., I, 1868, 75, pl. 24.
 Mead, Rep. Wheeler Exp., V. 1875, 754.
 French, But. E. U. S., 1886, 160, fig. 41.
 Packard, Guide, 8th Ed., 1883, 262. (Larvæ and pupæ described.)
 Scudder, But. E. U. S. and Can., 1889, I, 571;
 III, pls. 4, 21, 61, 84.

This species has been taken in the two widely separated counties of Vanderburgh (Evans) and Lake, but nowhere else in the State. As to its distinguishing characters, I quote the following from Edwards, loc. cit.: "Atlantis is readily distinguished from Aphrodite by its smaller size, duller color, broad black margins, confluent median band of secondaries and color of same wings below; also, by the longer and narrower fore wings. It is rarely to be seen in the open country where Aphrodite abounds, but frequents narrow passes in the mountains and the grass fields which skirt the forests. It is readily attracted by any decaying animal matter, and a piece of meat or a dead bird or snake has irresistible charms for it."

28. (141.) ARGYNNIS MYRINA, Cram. Myrina Butterfly. The Silver-Bordered Fritillary.
Argynnis myrina, Harris, Ins. Inj., 1862, 286, fig. 112.
 Morris, Lep. N. A., 1862, 45.
 Packard, Guide, 8th Ed., 1883, 253.
 French, But. E. U. S., 1886, 161, fig. 42.
Brenthis myrina, Scudder, But. E. U. S. and Can., 1889, I, 593;
 III, pls. 4, 12, 22, 64, 75, 84.

Vanderburgh County, by Evans. Otherwise only from the northern half of the State, where it is quite frequent in meadows and prairies from June 15 to September. Food plant, violets.

29. (152.) ARGYNNIS BELLONA, Fab. Bellona Butterfly. The Meadow Fritillary.
Argynnis bellona, Harris, Ins. Inj., 1862, 287, figs. 113, 114.
 Morris, Lep., N. A., 1862, 45.
 Mead, Rep. Wheeler Exp., 1875, 756.
 Packard, Guide, 1883, 253.
 French, But. E. U. S., 1886, 164.
Brenthis bellona, Scudder, But. E. U. S. and Can., 1889, I, 608;
 III, pls. 5, 12, 22, 64, 75, 84.

This, the smallest member of the genus, is found throughout the eastern and northern parts of the State, but is very rare if it occurs at all in the Lower Wabash Valley. It is quite common, where found, during July and August, in low meadows and prairies, especially those containing many flowers.

EUPTOIETA, Doubleday.

30. (154.) EUPTOIETA CLAUDIA, Cram. The Claudia Butterfly.

Euptoieta claudia, Mead, Rep. Wheeler Exp., V. 1875, 750.

French, Sev. Rep. State Ent. Ill., 1878, 150.

Id., But. E. U. S., 1886, 165, fig. 43.

Blatchley, Ind. Farm., 1886, Nov. 6.

Scudder, But. E. U. S. and Can., 1889, I, 519;

III, pls. 14, 21, 64, 75, 84.

Argynnis columbina, Morris, Lep. N. A., 1862, 44.

In the southern half of the State, but not seen or reported in the northern although it should occur there. Given as rare in most of the lists which mention it. Frequents meadows and borders of thickets from July 15 to October 15, a single specimen having been taken by the writer on the latter date in Vigo County. Food plants, violets, May apples, sedum and portulaca.

MELITÆA, Fabricius.

31. (156.) MELITÆA PHÆTON, Drury. Phæton Butterfly. The Baltimore.

Melitæa phæton, Harris, Ins. Inj., 1862, 288, fig. 115.

Morris, Lep. N. A., 1862, 50.

Packard, Guide, 8th Ed., 1883, 255, figs. 184-186.

Edwards, But. N. A. II, 1884, 151, pl. 30.

French, But. E. U. S., 1886, 168, figs. 44-47.

Blatchley, Ind. Farmer, 1886, November 6.

Euphydryas phæton, Scudder, But. E. U. S., I, 690; III, pls. 5, 12, 22, 64, 75, 84.

An uncommon species, noted in but four counties, viz.: Decatur, Vanderburgh, Vigo and Monroe, but probably found throughout the State. This is the only butterfly in Indiana whose larvæ live in colonies in webs of their own construction. These webs are woven on the food plants, which are snake-head or turtle-head (*Chelone glabra*), and the two monkey flowers (*Mimulus*). The larvæ form the webs about the last of July and, after feeding until they have moulted the third time, they pass the winter in a state of lethargy within them. With the first appearance of the food plant in spring they begin feeding again, after which is formed the chrysalis from which the butterfly emerges about June 1. It frequents low, open fields and marshes where the food plants abound, and flits with an irregular and nervous flight close to the earth.

PHYCIODES, Doubleday.

32. (186.) PHYCIODES NYCTEIS, Doubl.-Hew. The Peppermint Butterfly. The Silver Crescent.

Melitæa nycteis, Morris, Lep. N. A., 1862, 325, 351.

Packard, Guide, 8th Ed., 1883, 257.

Phyciodes nycteis, Mead, Rep. Wheeler Exp., V. 1875, 762.

French, But. E. U. S., 1886, 172, fig. 50.

Blatchley, Ind. Farmer, 1886, Nov. 6.

Charidryas nycteis, Scudder, But. E. U. S. and Can., 1889, I, 658; III, pls. 5, 22, 64, 75, 84.

Common all over the State, but less so than the next species, which it closely resembles. Found in the vicinity of streams, and during July and August frequents, by hundreds, the flowers of peppermint, *Mentha piperita*, and allied species. Food plants, asters, wild sunflowers and *Actinomeris*. The larvæ pass the winter, when partly grown, beneath the shelter of objects on the ground, and the imago has been taken in Western Indiana as early as May 17.

33. (190.) PHYCIODES THAROS, Drury. The Tharos Butterfly. The Pearl Crescent.

Melitæa tharos, Morris, Lep. N. A., 1862, 51 (*morpheus*).

Phyciodes tharos, Mead, Rep. Wheeler Exp., V. 1875, 763.

French, Sev. Rep. State Ent. Ill., 1878, 151.

Id., But. E. U. S., 1886, 177.

Edwards, But. N. A., II, 1884, 161, pl. 31, 32.

Packard, Guide, 8th Ed., 1883, 256.

Blatchley, Ind. Farm., 1886, Nov. 6.

Scudder, But. E. U. S. and Can., 1889, I, 629;

III, pls. 5, 12, 22, 64, 75, 84.

Melitæa pharos, Harris, Ins. Inj., 1862, 289, figs. 116, 117.

The two forms of this species, *marcia*, Ewd., and *morpheus*, Fab., are both very abundant, especially the latter. Three or four broods are produced each season, the first one (*marcia*) from hibernating larvæ, appearing about the tenth of May, and the others at intervals of six or eight weeks thereafter. In company with *Colias philodice*, they flock about muddy places in the roads and the damp, sandy margins of streams. Food plant, asters.

GRAPTA, Kirby.

34. (207.) GRAPTA INTERROGATIONIS, Fab. The Semicolon Butterfly. The Violet Tip.

Vanessa interrogationis, Harris, Ins. Inj., 1862, 298, fig. 124 (*fabricii*, text-*umbrosa*).

- Grapta interrogationis*, Morris, Lep. N. A., 1862, 53 (*umbrosa*).
 Edwards, But. N. A., I, 1872, p. 111,
 pls. 38, 39.
 French, Sev. Rep. State Ent. Ill., 1878,
 151.
 Id., But. E. U. S., 1886, 182, fig. 51.
 Packard, Guide, 8th Ed., 1883, 259.
 Blatchley, Ind. Farmer, 1886, Nov. 20.
Polygonia interrogationis, Scudder, But. E. U. S., I, 319; III,
 pls. 3, 11, 20, 64, 74, 83.

Throughout the State. Of the two forms recognized by Edwards, the paler one, *fabricii*, is much the more common, especially the members of the brood which emerge about September 10, the individuals of which hibernate. This form is also quite variable, the silver spot on the under surface of the hind wings being often unbroken, and in many specimens the larger and hindmost of the black spots between the cell and hind margin of the fore wings above is double, the additional spot being larger than either of those in the cell. It frequents roadsides, borders of thickets and the vicinity of gardens where hops are cultivated.

35. (208.) **GRAPTA COMMA**, Harr. The Comma Butterfly. The Hop Merchant.

- Vanessa comma*, Harris, Ins. Inj., 1862, 300, pl. 4, fig. 1 (*harrisii*).
Grapta comma, Morris, Lep. N. A., 1862, 54.
 Edwards, But. N. A., I, 1871, 101, pl. 36 (*harrisii*).
 French, Sev. Rep. S. Ento. Ill., 1878, 152.
 Id., But. E. U. S., 1886, 185.
 Packard, Guide, 1883, 260.
 Blatchley, Ind. Farmer, 1886, Nov. 20.
Polygonia comma, Scudder, But. E. U. S. and Can., I, 332; III,
 pls. 3, 20, 64, 74, 83.
Grapta dryas, Edwards, But. N. A., I, 1871, 109, pl. 37 (form *dryas*).

A common species in most parts of the State, but not reported in all the lists. Food plants—hop, elm, and nettles. Like *G. interrogationis*, the members of the late brood of this species seek some sheltered place, such as a crevice in a rock or a hole in a tree, where they pass the winter in a dormant state, from which they are aroused by the first warm breezes of spring. Specimens have been taken on the wing as late as November 22, and as early as March 4. During the summer three or four may usually be found in company in damp places, alongside of streams or in shaded ravines.

36. (217.) *GRAPTA PROGNE*, Cram. The Progne Butterfly.
Vanessa progne, Harris, Ins. Inj., 1862, 301.
 Morris, Lep. N. A., 1862, 56.
Grapta progne, French, But. E. U. S., 1886, 190, fig. 53.
 Blatchley, Ind. Farmer, 1886, Nov. 20.
Polygonia progne, Scudder, But. E. U. S. and Can., 1889, I, 362;
 III, pls. 3, 16, 19, 64, 74, 83.
Grapta c-argenteum, Packard, Guide, 1883, 260, fig. 188.

This small *Grapta* has been taken in six counties in different portions of the State, but is scarce wherever found. In midsummer it frequents rocky ledges and shaded ravines, but in autumn it is more often found along the margins of dense woods. When disturbed it, as well as the two preceding members of the genus, has the habit of making a short circuit and flying back to the self-same spot from whence it was started.

Food plants—gooseberry, currant, blackberry and elm.

37. (218.) *GRAPTA J-ALBUM*, Bd.-Lec. The White J. Butterfly.
Vanessa j-album, Harris, Ins. Inj., 1862, 298.
 Morris, Lep. N. A., 1862, 56.
Grapta j-album, French, But. E. U. S., 1886, 192.
Eugonia j-album, Scudder, But. E. U. S. and Can., 1889, I,
 379; III, pls. 3, 20, 83.

Vanderburgh, Decatur and Lake. Rare in the three counties. Borders of thickets and along streams during July and August. Hibernates as imago. Food plant unknown. Vanderburgh County is, up to the present, the most southern station at which *j-album* has been taken.

VANESSA, Fabricius.

38. (219.) *VANESSA ANTIOPA*, Linn. The Camberwell Beauty. The Mourning Cloak. The Antiopa Butterfly.
Vanessa antiopa, Harris, Ins. Inj., 1862, 296, fig. 121, 123.
 Morris, Lep. N. A., 1862, 57.
 Wood, Insects at Home, 1873, 396.
 French, Sev. Rep. State Ento. Ill., 1878, 153.
 Id., But. E. U. S., 1886, 193.
 Packard, Guide, 8th Ed., 1883, 258.
 Blatchley, Ind. Farmer, 1886, Nov. 20.
Euranesa antiopa, Scudder, But. E. U. S. and Can., 1889, I, 397;
 III, pls. 2, 11, 20, 64, 74, 83.

A common and handsome species often seen in spring as early if not earlier than *Grapta comma*, as it also winters in the perfect state. It is, however, much more abundant than that species for about a month, after which it disappears, and none are seen till the first of June, when it

again becomes common, the first brood of the season having emerged from chrysalid. A second brood appears about the middle of September. In England, where it is rare and considered a great prize by the collectors, it is known as the Camberwell Beauty. The larvæ feed upon the leaves of willow, elm and poplar.

39. (221.) *VANESSA MILBERTII*, Godt. Milbert's Butterfly. The American Tortoise-shell.

Vanessa milbertii, Harris, Ins. Inj., 1862, 302, fig. 125.

Morris, Lep. N. A., 1862, 56.

Mead, Rep. Wheeler Exp., V. 1875, 769.

Packard, Guide, 8th Ed., 1883, 259.

French, But. E. U. S., 1886, 195.

Aglais milberti, Scudder, But. E. U. S. and Can., 1889, I, 420; III, pls. 2, 12, 20, 64, 74, 83.

This brilliantly colored Vanessa has a wide distribution, but appears to be nowhere as common as *Antiopa*, with which species it agrees essentially in habits.

In Indiana it has been taken only in Lake and Vanderburgh counties, from both of which it is reported as rare. Food plant, nettle. Vanderburgh County is, as far as known, the most southern station at which it has been taken.

"The butterfly is found most abundant by the roadside, especially among the hills, and by the margin of forests. It is always found in sunny exposures; is fond of resting on dry leaves scattered over the ground in spring, and, like many other early butterflies, is attracted by the blossoms of the lilac."—SCUDDER.

PYRAMEIS, Doubleday.

40. (222.) *PYRAMEIS ATALANTA*, Linn. The Red Admiral. The Atalanta Butterfly.

Cynthia atalanta, Harris, Ins. Inj., 1862, 294, fig. 120.

Pyrameis atalanta, Morris, Lep. N. A., 1862, 58.

French, Sev. Rep. St. Ento., Ill., 1878, 153.

Id., But. E. U. S., 1886, 196, fig. 55.

Packard, Guide, 1883, 261.

Blatchley, Ind. Farmer, 1887, April 23.

Vanessa atalanta, Wood, Insects at Home, 1873, 399, pl. 13.

Scudder, But. E. U. S. and Can., 1889, I, 441; III, pls. 2, 12, 20, 64, 74, 83.

A common and showy butterfly, which also hibernates as imago, and comes forth from its winter quarters on the first warm days of March and April. It is most abundant, however, about June 10 and September 20,

when the two broods of the season respectively emerge. It flies everywhere, but especially abounds about clumps of willows, on the trunks of which it delights to rest and enjoy the sunshine, and when disturbed flits away but a short distance and soon returns to the same or an adjacent tree. According to Harris, *atalanta* was probably introduced with its food plant, the common nettle, into this country from Europe, where it is also abundant, and known as the Red Admiral Butterfly.

41. (223.) PYRAMEIS HUNTERA, Fab. Hunter's Butterfly. The Painted Beauty.

Cynthia huntera, Harris, Ins. Inj., 1862, 292, fig. 119.

Pyrameis huntera, Morris, Lep. N. A., 1862, 60.

French, Sev. Rep. St. Ento. Ill., 1878, 153.

Id., But. E. U. S., 1886, 198.

Mead, Rep. Wheeler Exp., V. 1875, 769.

Blatchley, Ind. Farmer, 1887, April 23.

Vanessa huntera, Scudder, But. E. U. S. and Can., 1889, I, 457; III, pls. 2, 12, 20, 74, 83.

Much less common than the preceding, but found throughout the State. The larvæ feed upon everlasting (*Gnaphalium polyccephalum*), and the various species of *Artemisia*. The butterfly is most often met with in August and September, in fields containing golden rods and wild asters. There are two broods each season; the butterflies and occasionally the chrysalids of the autumn brood hibernating.

42. (224) PYRAMEIS CARDUI, Linn. Thistle Butterfly. The Painted Lady.

Cynthia cardui, Harris, Ins. Inj. 1862, 291, fig. 118.

Pyrameis cardui, Morris, Lep. N. A., 1862, 59.

Mead, Rep. Wheeler Exp., V. 1875, 770.

French, Sev. Rep. St. Ento. Ill., 1878, 154.

Id., But. E. U. S., 1886, 199.

Blatchley, Ind. Farmer, 1887, April 23.

Vanessa cardui, Wood, Ins. at Home, 1873, 401, pl. 13.

Scudder, But. E. U. S. and Can., 1889, I, 469; III, pls. 2, 12, 21, 64, 74, 83.

The Thistle Butterfly is a rather common species from mid-June until after heavy frosts. During the summer months it is usually found in open pastures where there are thistle patches, but on sunny days in autumn it is often seen in orchards sipping the juices from a bruised or rotten apple. In England, where it is common, it is known as the "Painted Lady," on account of the variety and beauty of its colors. The larvæ feed upon thistles, burdock and wild sunflowers, and are therefore more beneficial than otherwise. It passes the winter as imago, and in Vigo County has been taken on the wing as early as April 10.

JUNONIA, Doubleday.

43. (226.) JUNONIA COENIA, Hub. The Coenia Butterfly. The Buckeye.

Junonia coenia, Morris, Lep. N. A., 1862, 61.

Packard, Guide, 1883, 261.

French, But. E. U. S., 1886, 200, fig. 56.

Scudder, But. E. U. S. and Can., 1889, I, 494;
III, pls. 14, 21, 64, 74, 83.

Cynthia lavinia, Harris, Ins. Inj., 1862, 293.

Junonia lavinia, French, Sev. Rep. St. Ent. Ill., 1878, 154.

A showy insect, abundant in the Southern States, and rarely found as far north as Lake County, Indiana, where it has been taken by Worthington. Single specimens have also been secured in Jefferson and Vigo counties, and a few in Vanderburgh.

It flies from June to November in open fields and low meadows where flowers are abundant. Food plants, plantain, gerardia and snapdragon.

LIMENITIS, Fabricius.

44. (236.) LIMENITIS URSULA, Fab. The Ursula Butterfly. The Red-spotted Purple.

Nymphalis ursula, Morris, Lep. N. A., 1862, 64.

Limenitis ursula, French, Sev. Rep. St. Ent. Ill., 1878, 154.

Id., But. E. U. S., 1886, 206, fig. 58.

Packard, Guide, 1883, 262.

Blatchley, Ind. Farmer, 1887, April 23.

Basilarchia astyanax, Scudder, But. E. U. S. and Can., 1889, I,
280; III, pls. 2, 19, 64, 74, 83.

Nymphalis ephestion, Harris, Ins. Inj., 1862, 283.

Limenitis ephestion, Packard, Guide, 1883, 262.

Common in the central and southern half of the State, less so in the north. Its usual resorts are the vicinity of streams and about muddy places in roads, although it is often seen in orchards and gardens. It winters in the larva state and is most common as imago in June and the latter half of August. The food plants of the larvæ are willow, wild cherry, apple, plum, oak and ironwood.

45. (237.) LIMENITIS ARTHEMIS, Drury. The Banded Purple Butterfly.

Nymphalis arthemis, Harris, Ins. Inj., 1862, 283, pl. I, fig. 7.

Morris, Lep. N. A., 1862, 65.

Limenitis arthemis, Edwards, But. N. A., II, 1884.

Packard, Guide, 1883, 262.

French, But. E. U. S., 1886, 208.

Basilarchia arthemis, Scudder, But. E. U. S. and Can., 1889, I, 294; III, pls. 2, 19, 54, 74, 81, 83.

Limenitis proserpina, Edwards, But. N. A., I, 1868, 127, pl. 48. (Form *proserpina*.)

Id., Canadian Entomologist, March, 1891, 49.

Basilarchia proserpina, Scudder, But. E. U. S. and Can., 1889, I, 289; III, pls. 2, 19. (Form *proserpina*.)

This handsome butterfly is a northern species which has been taken in Lake County, by Worthington. It is found from June to September frequenting the same localities as *L. ursula*. The larvæ feed upon willow, aspen, basswood, and probably thorn.

Mr. S. H. Scudder, in his But. E. U. S., p. 289, regards the form *proserpina* as a hybrid between *L. ursula* and *L. arthemis*. Mr. Edwards in the Canadian Entomologist, loc. cit., controverts this view, and gives in full his reasons for considering it a dimorphic form of *arthemis*.

46. (239.) *LIMENITIS DISIPPUS*, Godt. The Disippus Butterfly.
The Viceroy.

Nymphalis disippus, Harris, Ins. Inj., 1862, 281, fig. 109.

Morris, Lep. N. A., 1862, 65.

Limenitis disippus, French, Sev. Rep. St. Ento. Ill., 1878, 154.

Id., But. E. U. S., 1886, 210, figs. 59-62.

Edwards, But. N. A., II, 1884, 227. (Descrip. of larvæ.)

Blatchley, Ind. Farmer, 1887, April 23.

Limenitis misippus, Packard, Guide, 1883, 262, fig. 189.

Basilarchia archippus, Scudder, But. E. U. S. and Can., 1889, I, 267; III, pls. 1, 11, 19, 64, 74, 83.

A rather common species in all parts of the State, but by casual observers usually confounded with *Danais archippus*, Fab., which it closely resembles in color and markings, but from which it may be readily known by the presence of a narrow, curved, black band across the center of the hind wings. There are two broods each season, the larvæ of the second brood constructing from a leaf a tube-shaped retreat into which they enter, head first, and pass the winter. Their dwellings are formed by first fastening, by means of silk, a leaf to the twig upon which it grew. Notches are then cut in the leaf and the edges are bent together and fastened by a silken thread. In the words of Edwards, loc. cit.: "Some caterpillars cover themselves in a web, or bind two leaves together loosely; more conceal themselves under wood or stone, or in the sod; but here is one who has turned tailor, weaver and house builder. It knows just what sort of leaf to choose for its purpose, takes its measurement, cuts out the pattern on a system peculiar but effective;

sews it up; upholsters the interior with silken threads, and takes possession, even having provided against the ingress of water by a flap, shaped when the pattern is cut out." It is an interesting fact that only the second brood of larvæ exhibits an instinct for thus forming homes. The butterfly is most frequent in July, and is usually found in low grounds, about clumps of willows, upon the leaves of which the larvæ feed. Additional foot plants are poplar, plum and oak.

APATURA, Fabricius.

47. (244.) APATURA CELTIS, Bd.-Lec. The Eyed Emperor. The Hackberry Butterfly.

Apatura celtis, Morris, Lep. N. A., 1862, 68.

French, Sev. Rep. St. Ento. Ill., 1878, 155.

Id., But. E. U. S., 1886, 215, figs. 63, 64.

Edwards, But. N. A., II, 1884, 231, pl. 38.

Blatchley, Ind. Farmer, 1887, May 11.

Chlorippe celtis, Scudder, But. E. U. S. and Can., 1889, III, 1788.

This species is found in the southern half of the State and as far north as Wabash County, where it has been taken by the writer, but it is nowhere abundant. It flies during July and August in low, open woods, especially those where the food plant of the larva, *Celtis occidentalis*, or the hackberry tree, grows. *Celtis* has a swift flight and darts rapidly from one object to another as if actuated by curiosity, often alighting upon the body of the person pursuing it or upon the net, where it opens and closes its wings rapidly for a few seconds, and then starts out on a short circuit soon to return again. The larvæ pass the winter hidden among the ridges in the bark of the hackberry and may be found feeding on the buds as soon as the latter appear in spring.

48. (248.) APATURA CLYTON, Bd.-Lec. The Tawny Emperor.

Apatura clyton, Morris, Lep. N. A., 1862, 68.

French, Sev. Rep. St. Ent. Ill., 1878, 155.

Id., But. E. U. S., 1886, 218, figs. 65, 66.

Edwards, But. N. A., II, 1884, 245, pl. 39.

Blatchley, Ind. Farmer, 1887, May 11.

Chlorippe clyton, Scudder, But. E. U. S. and Can., 1889, I, 241; III, pls. 16, 19, 64, 74, 83.

The range of this species in the State coincides with that of *A. celtis*, the food plant being the same. It is, however, much less common than the latter, having been taken in but five counties, whereas *celtis* is reported in all the lists but two. Neither species is found in the north-western corner of the State. Of the two forms of *clyton*, *ocellata*, Edw., is the more common. There is but one brood each season, the butterfly

emerging about June 15. It frequents the vicinity of streams, but is sometimes seen in company with *A. celtis* about dwellings and orchards, especially towards the close of its season. A single specimen was taken in the heart of the city of Wabash, Ind., August 11, 1890.

PAPHIA, Westwood.

49. (251.) PAPHIA TROGLODYTA, Fab. The Goat Weed Butterfly.
Paphia troglodyta, French, But. E. U. S., 1886, 226, figs. 67-69.
Paphia glycerium, Morris, Lep. N. A., 1862, 67.
 Edwards, But. N. A., I, 1871, 137, pl. 46.
Paphia andria, French, Sev. Rep. St. Ent., Ill., 1878, 156.
Anæa andria, Scudder, But. E. U. S. and Can., III, 1794.

A southwestern species, the habitat of which is given by Edwards as Illinois to Texas. Very rare in Indiana, a single specimen having been taken in Vigo County, by Prof. B. W. Evermann, on April 24, 1890, and "one or two in three different seasons," in Vanderburgh County, by Evans. The larvæ feed upon species of *Croton*, and the imago hibernates, there being but one brood each season.

"The butterfly is often seen in orchards resting on the sunny side of the trees, at other times on the road or upon the fences. It is shy and difficult to capture, although it seldom leaves a favorite locality, but continues to fly about until danger has passed."—EDWARDS, loc. cit.

SATYRINÆ.

DEBIS, Westwood.

50. (253.) DEBIS PORTLANDIA, Fab. The Woodland Butterfly. The Pearly Eye.
Debis portlandia, Morris, Lep. N. A., 1862, 79.
 French, But. E. U. S., 1886, 229, fig. 70.
 Blatchley, Ind. Farmer, 1887, May 11.
Enodia portlandia, Scudder, But. E. U. S. and Can., 1889, I, 180;
 III, pls. 1, 18, 64, 74, 83.
Debis andromacha, Morris, Lep. N. A., 1862, 78, 351.

The Woodland Butterfly has been taken in six counties in as many different portions of the State, but is nowhere common. Its favorite resorts are dense, damp woods and thickets, where, during July and August, it may be found resting on the stump or trunk of a tree in the immediate vicinity of the coarse grasses, which are the food plants of the larvæ. In this State it is single brooded and the larvæ hibernate.

NEONYMPHA, Westwood.

51. (254.) NEONYMPHA CANTHUS, Bd.-Lec. The Canthus Butterfly.
The Eyed Brown.

Neonympha canthus, Morris, Lep. N. A., 1862, 74.

French, But. E. U. S., 1886, 232.

Hipparchia boisduvali, Harris, Ins. Inj., 1862, 305, fig. 128.

Satyrodes eurydice, Scudder, But. E. U. S. and Can., 1889, I, 193;
III, pls. 1, 11, 18, 64, 74, 83.

Noted only in Lake County, where it is common, but should be found throughout the northern half of the State. It is on the wing during June and July, and is found in low open woods and meadows. The larvæ feed upon various kinds of grass and hibernate after the fourth moult.

52. (258.) NEONYMPHA EURYTRIS, Fab. The Wood Nymph Butterfly.
Hipparchia eurytris, Harris, Ins. Inj., 1862, 306, fig. 129.

Neonympha eurytris, Morris, Lep. N. A., 1862, 73.

French, Sev. Rep. St. Ent. Ill., 1878, 156.

Id., But. E. U. S., 1886, 238.

Packard, Guide, 1883, 264.

Blatchley, Ind. Farmer, 1887, May 11.

Cissia eurytus, Scudder, But. E. U. S. and Can., 1889, I, 214;
III, pls. 1, 11, 18, 64, 74, 83.

This little wood-brown butterfly is rather common throughout the State from May 15 until August. It frequents woods, fence rows, and shady roadsides and flies close to the ground with a queer, jerky flight, often alighting on the grass, or on a log or chip, seldom on a flower or shrub. The larvæ feed upon grass, and the second brood of the season hibernate.

SATYRUS, Westwood.

53. (283.) SATYRUS ALOPE, Fab. The Alope Butterfly. The Blue-eyed Grayling.

Hipparchia alope, Harris, Ins. Inj., 1862, 305, fig. 127. (Form *alope*, Fab.)

Satyrus alope, Morris, Lep. N. A., 1862, 76.

French, Sev. Rep. St. Ent. Ill., 1878, 156.

Id., But. E. U. S., 1886, 243, fig. 71. (All forms.)

Packard, Guide, 8th Ed., 1883, 263.

Edwards, But. N. A., II, 1884, 261, pls. 41, 42. (All forms.)

- Cercyonis alope*, Scudder, But. E. U. S. and Can., 1889, I, 163; III, pls. 1, 11, 18, 67, 74. (Form *alope*.)
- Erebia nephele*, Morris, Lep. N. A., 1862, 76. (Form *nephele*, Kirby.)
- Satyrus nephele*, Mead, Rep. Wheeler Exp., V. 1875, 773. Packard, Guide, 1883, 263.
- Hipparchia nephele*, Harris, Ins. Inj. 1862, fig. 130. (No text.)
- Cercyonis nephele*, Scudder, But. E. U. S. and Can., 1889, I, 171; III, pls. 1, 11, 18, 64, 83. (Form *nephele*.)

Three forms of this handsome butterfly, viz., *alope*, Fab., *nephele*, Kirby, and *olympus*, Edwards, are found in the northern part of the State. It ranges as far south as the southern border of White and Wabash Counties. *Olympus* has been noted only in Lake County. All the forms are on the wing during July and August, and frequent open woods, meadows and prairies. The larvæ feed upon the various species of wild grasses and hibernate.

LIBYTHEINÆ.

LIBYTHEA, Fabricius.

54. (309.) LIBYTHEA BACHMANI, Kirtland. Bachman's Butterfly. *Libythea bachmani*, Morris, Lep. N. A., 1862, 63. French, Sev. Rep. St. Ent. Ill., 1878, 157. Id., But. E. U. S., 1886, 250. Packard, Guide, 8th Ed., 1883, 264. Edwards, But. N. A., II, 1884, 289, pl. 46. Blatchley, Ind. Farmer, 1887, May 11. *Hypatus bachmanii*, Scudder, But. E. U. S. and Can., 1889, I, 760; III, pls. 4, 21, 64, 75, 84.

This curious little fly, with its long, beak-like palpi and angled fore wings, once seen will ever after be recognized at first sight. It doubtless inhabits all parts of the State, having been taken in six widely separated counties, yet but few are found each season in any one locality. It frequents low grounds and the vicinity of streams, and flies from June to September. Food plant, hackberry.

LYCÆNIDÆ.

LYCÆNINÆ.

THECLA, Fabricius.

This large genus is represented in Indiana, so far as known, by ten species, but one of which may be said to be common. All are comparatively small in size, of a blue, smoky brown or black color, and have wings of a delicate texture. The habits of all are essentially the same. They mostly pass the winter in the pupa stage, and the imagoes are to be found from May 15 until frost. They are seldom seen except along fence rows and the borders of woods and thickets, where they flit rapidly to and fro with a restless, jerking flight, pausing every few moments on leaf of brier or shrub to bask in the sunlight, and then as suddenly starting onward again.

55. (326.) THECLA HALESUS, Cram. Great Purple Hair-streak.

Thecla halesus, Morris, Lep. N. A., 1862, 91.

Mead, Rep. Wheeler Exp., V, 1875, 777.

French, But. E. U. S., 1886, 255.

Atlides halesus, Scudder, But. E. U. S. and Can., 1889, III, 1827.

A western and southern species, not before reported east of Illinois. Found in small numbers in Lake County by Worthington. Food plant, oak.

56. (327.) THECLA M-ALBUM, Bd.-Lec. The Black-banded Hair-streak.

Thecla m-album, Morris, Lep. N. A., 1862, 92.

French, But. E. U. S., 1886, 256.

Eupsyche m-album, Scudder, But. E. U. S. and Can., 1889, III, 1824.

Thecla psyche, Morris, Lep. N. A., 1862, 93.

An eastern *Thecla*, not before reported west of Ohio. Rare in Jefferson and Decatur counties. Food plant, oak.

57. (331.) THECLA HUMULI, Harr. The Hopvine *Thecla*. The Gray Hair-streak.

Thecla humuli, Harris, Ins. Inj., 1862, 276, pl. IV, fig. 3.

French, Sev. Rep. St. Ent., Ill., 1878, 157.

Id., But. E. U. S., 1886, 259.

Packard, Guide, 1883, 265.

Thecla favonius, Morris, Lep. N. A., 1862, 95.

Thecla hyperici, Morris, Lep. N. A., 1862, 94.

Uranotes melinus, Scudder, But. E. U. S. and Can., 1889, II, 850;
III, pls. 6, 14, 23, 65, 75, 84.

Throughout the State, but rather scarce. The larvæ feed upon the hop, bean and thorn, and the butterfly frequents the vicinity of these plants from May to September.

58. (339.) *THECLA EDWARDSII*, Saunders. Edward's Thecla.

Thecla edwardsii, French, But. E. U. S., 1886, 261.

Scudder, But. E. U. S. and Can., 1889, II,
892; III, pls. 6, 24, 65, 75, 84.

Thecla falacer, Harris, Ins. Inj., 1862, 276.

Found up to the present only in the northern part of, but probably exists throughout the State. Scarce. Food plant, hawthorne and oak.

59. (341.) *THECLA CALANUS*, Hub. The Oak Thecla. The Banded Hair-streak.

Thecla calanus, French, But. E. U. S., 1886, 263, fig. 73.

Blatchley, Hoos. Nat., II, 1886, 62.

Scudder, But. E. U. S. and Can., 1889, II, 885;
III, pls. 6, 14, 24, 65, 75, 84.

Thecla falacer, Morris, Lep. N. A., 1862, 95.

This is our most common Thecla and is found in all parts of the State. The larvæ feed upon the various species of oak, and hibernate, the imago emerging from chrysalid in June and July.

60. (343.) *THECLA STRIGOSA*, Harr. The Streaked Thecla. The Striped Hair-streak.

Thecla strigosa, Harris, Ins. Inj., 1862, 276.

Morris, Lep. N. A., 1862, 101.

Edwards, But. N. A., I, 1869, 146, pl. 48.

French, Sev. Rep. St. Ent. Ill., 1878, 157.

Id., But. E. U. S., 1886, 266, fig. 74.

Packard, Guide, 1883, 267.

Blatchley, Hoos. Nat., II, 1886, 62.

Thecla liparops, Scudder, But. E. U. S. and Can., 1889, II, 877;
III, pls. 6, 24, 65, 75, 84.

All over the State, but found only in small numbers in the counties in which it has been taken. Food plants, oak, apple and willow. There is but one brood each season, the butterflies appearing about July 10.

61. (355.) *THECLA SMILACIS*, Bd.-Lec. The Auburn Thecla. The Olive Hair-streak.

Thecla smilacis, Morris, Lep. N. A., 1862, 98.

French, But. E. U. S., 1886, 268.

Thecla auburniana, Harris, Ins. Inj. 1862, 277

Thecla auburniana, Morris, Lep. N. A., 1862, 101.

Mitura damon, Scudder, But. E. U. S. and Can., 1889, II, 861; III, pls. 6, 23, 65, 75, 84.

Lake County. Rare. (Worthington.) Food plant, the red cedar, *Juniperus Virginiana*, Linn., about which the imago is almost always found. There are two broods each season which appear in May and August, respectively.

62. (357.) *THECLA POEAS*, Hub. The Least Purple Hair-streak.

Thecla poeas, Morris, Lep. N. A., 1862, 103.

French, But. E. U. S., 1886, 270.

Blatchley, Hoos. Nat. II, 1886, 62.

Calycopis cecrops, Scudder, But. E. U. S. and Can., 1889, III, 1821.

This, one of the prettiest of the *Theclas*, is southern in its range and rare in our State. A single specimen was taken by the writer from an oleander bush, in Monroe County, August 17, 1890. Mr. Edwards has also received it from Indiana, but is unable to give the locality. Food plant, unknown, but probably one of the species of huckleberry, *Vaccinium*, of which two or three kinds grow in Monroe County.

63. (367.) *THECLA HENRICHI*, Gr.-Rob. The Plum Thecla. The Hoary Elfin.

Thecla henricii, French, But. E. U. S., 1886, 273.

Incisalia irus, Scudder, But. E. U. S. and Can., 1889, II, 835; III, pls. 6, 23, 65, 75, 85.

This species, which, according to Edwards, has been previously recorded only from West Virginia and Maine, has been taken in Jefferson County by Mr. Hubbard. The larvæ feed upon wild plum, and the perfect insects, appearing about May 1, frequent the flowers of the red bud, *Cercis Canadensis*, Linn., and the borders of sandy roads.

64. (376.) *THECLA TITUS*, Fab. The Wild Cherry Thecla. The Coral Hair-streak.

Thecla titus, French, But. E. U. S., 1886, 278.

Blatchley, Hoos. Nat., II, 1886, 62.

Strymon titus, Scudder, But. E. U. S. and Can., 1889, II, 809; III, pls. 6, 23, 65, 75, 84.

Thecla mopsus, Harris, Ins. Inj., 1862, 278.

Morris, Lep. N. A., 1862, 102.

Mead, Rep. Wheeler Exp., V., 1875, 779.

Packard, Guide, 1883, 266.

In all parts of the State, but scarce where found. It is one of the handsomest and largest members of the genus. Food plant, wild cherry. It passes the winter in the egg state, and flies as imago during July and August, frequenting the flower of golden rod, milkweed and thistle.

FENISECA, Grote.

65. (377.) FENISECA TARQUINIUS, Fab. The Wanderer.

Feniseca tarquinius, French, But. E. U. S., 1886, 279.

Scudder, But. E. U. S. and Can., 1889, II,
1016; III, pls. 5, 25, 34, 43, 65, 84.

Polyommatus crataegi, Morris, Lep. N. A., 1862, 85.

Taken only in Jefferson County, where it is rare, but should occur all over the State. The larvæ are remarkable for their carnivorous habits, as they feed only upon plant lice or aphids, and are especially fond of the species of these insects which frequent the common alder, *Alnus incana*, Willd. Hence the butterfly is most often found in the vicinity of streams, along the banks of which the alder grows. It is on the wing at intervals from May 15 to mid-September, as there are three broods each season.

CHRY SOPHANUS, Doubleday.

66. (385.) CHRY SOPHANUS THOE, Bd.-Lec. The Thoe Butterfly.
The Bronze Copper.

Polyommatus thoe, Morris, Lep. N. A., 1862, 84.

Chrysophanus thoe, French, Sev. Rep. St. Ent. Ill., 1878, 158.

Id., But. E. U. S., 1886, 281.

Packard, Guide, 8th Ed., 1883, 264.

Blatchley, Hoos. Nat., II, 1886, 62.

Scudder, But. E. U. S. and Can., 1889, II,
977; III, pls. 5, 25, 65, 84.

This handsome species is rare where found, and has been taken in four widely separated counties. There are two broods each season which emerge in June and August. The butterfly is to be found in low meadows and about the borders of ponds. The food plant is curled dock, *Rumex crispus*.

67. (391.) CHRY SOPHANUS EPIXANTHE, Bd.-Lec. The Epixanthe
Butterfly. The Purple Disk.

Lycæna epixanthe, Harris, Ins. Inj., 1862, 274.

Polyommatus epixanthe, Morris, Lep. N. A., 1862, 85.

Chrysophanus epixanthe, French, But. E. U. S., 1886, 282.

Epidemia epixanthe, Scudder, But. E. U. S., and Can., 1889,
II, 985; III, Pls. 5, 25, 65, 79.

Lake County. Rare. Probably throughout the northern half of the State. It is single brooded, the butterflies emerging in June and July, when they are found only in the vicinity of cranberry bogs and peaty meadows.

68. (392.) *CHRYSOPHANUS HYPOPHLEAS*, Bd. The American Copper Butterfly.

Polyommatus hypophleas, Morris, Lep. N. A., 1862, 84.

Chrysophanus hypophleas, French But. E. U. S., 1886, 283, figs. 75-77.

Blatchley, Hoos. Nat., II, 1886, 62.

Heodes hypophleas, Scudder, But. E. U. S. and Can., 1889, II, 998; III, pls. 5, 13, 25, 65, 75, 84.

Lycæna americana, Harris, Ins. Inj., 1862, 273; fig. 104.

Polyommatus americana, Morris, Lep. N. A., 1862, 91.

Chrysophanus americana, French, Sev. Rep. St. Ent. Ill., 1878, 158.

Packard, Guide, 1883, 264.

Polyommatus phleas, Morris, Lep. N. A., 1862, 84.

Quite common in the Lower Wabash Valley, but rare in the northern and eastern parts of the State. It flies from May 1st to October, and is most often met with in lowland meadows or along sandy roadsides, where in small parties of two to four it flits close to the ground, stopping ever and anon to rest upon a blade of grass or to sip the moisture from the margin of a puddle left by some recent rain. The larvæ feed upon a small dock, known as sheep sorrel, *Rumex acetosella*.

LYCÆNA, Fabricius.

69. (432.) *LYCÆNA PSEUDARGIOLUS*, Bd.-Lec. The Azure Blue Butterfly.

Polyommatus pseudargiolus, Harris, Ins. Inj., 1862, 274, text. (*neglecta*, Edw.).

Argus pseudargiolus, Morris, Lep. N. A., 1862, 82 (*pseudargiolus*, Bd.).

Lycæna pseudargiolus, Edw., But. N. A., I, 1869, 153, pl. 50 (*pseudargiolus*).

Id., But. N. A., II, 1884, 315, pls. 50, 51. (All forms.)

Mead, Rep. Wheeler Exp., V. 1875, 785 (*violacea*, Edw.).

French, Sev. Rep. St. Ent. Ill., 1878, 158.

Id., But. E. U. S., 1886, 286, figs. 78-80. (All forms.)

Blatchley, Hoos. Nat., II, 1886, 62.

Cyaniris pseudargiolus, Scudder, But. E. U. S., II, 1886, 927; III, pls. 6, 13, 24, 65, 75, 84.

- Lycæna neglecta*, Edwards, But. N. A., I, 1869, 155,
pl. 50 (*neglecta*).
Packard, Guide, 1883, 265.
Mead, Rep. Wheeler Exp., V. 1875,
786.
- Lycæna violacea*, Edw., But. N. A., I, 1868, 149, pl. 49.
Lycæna lucia, Harris, Ins. Inj., 1862, 275, fig. 106
(*lucia*, Kirby).
- Polyommatus lucia*, Morris, Lep. N. A., 1862, 90.

Four forms of this variable and much described species are found in Indiana, three of which, viz., *pseudargiolus*, Bd.-Lee., *neglecta*, Edw., and *violacea*, Edw., are found throughout the State, while *lucia*, Kirby, has been taken only in Lake County. Of the four, *violacea*, which flies in early spring, and *neglecta*, in late summer, are the most common.

The black male, var. *nigra* of *violacea*, has been taken by the writer in Wabash County, but is not reported elsewhere. *Pseudargiolus* is said by Worthington not to occur in Lake County, and when found in other parts of the State is comparatively rare.

All these forms have essentially the same habits, and are seldom found except in low, shady places, and especially in the vicinity of small streams. *Violacea* winters in the pupa state, and Mr. Edwards has given a pleasing description of its habits, as follows: "By the 3d or 4th of April we usually have one or two very warm days, the mercury at 80°, and then these little butterflies swarm along the sunny sides of creeks, gathering in clusters as close as they can stand, in favorite spots, motionless, with wings erect and closed, wholly intent in extracting from the sand some fluid, no doubt delightful. These are all males, for the females do not appear until some days after, or about the 10th. By this time the peach trees are in full bloom and the females are especially attracted to them. But, as a general thing, this species is not partial to flowers." The larvæ feed upon various plants, chief among which are *Actinomeris*, *Cornus* or dogwood, and *Cimicifuga*, or black snake root.

70. (434.) LYCÆNA COMYNTAS, Godt. The Comyntas Butterfly.
The Tailed Blue.

- Polyommatus comyntas*, Harris, Ins. Inj., 1862, 275.
Morris, Lep. N. A., 1862, 83.
- Lycæna comyntas*, Mead, Rep. Wheeler Exp., V. 1875, 783.
French, Sev. Rep. St. Ent. Ill., 1878, 158.
Id., But. E. U. S., 1886, 292, fig. 81
Packard, Guide, 1883, 265.
Blatchley, Hoos. Nat., II, 1886, 62.
- Everes comyntas*, Scudder, But. E. U. S. and Can., 1889, II,
911; III, pls. 6, 14, 24, 65, 75, 84.

Very common from June to September, collecting with *Colias philodice* and the two species of *Phyciodes* about muddy spots in the roads. Also, often found in fields of clover, upon which plant the larvæ feed, or along dry hillsides, where grow the other food plants, species of *Desmodium* and *Lespedeza*.

HESPERIDÆ.

ANCYLOXYPHA, Felder.

71. (448.) *ANCYLOXYPHA NUMITOR*, Fab. The Bordered Skipper.
The Least Skipper.

Pamphila numitor, Morris, Lep. N. A., 1862, 120.

Ancyloxypha numitor, French, But. E. U. S., 1886, 301.

Blatchley, Hoos. Nat., II, Dec., 1886, 62.

Scudder, But. E. U. S. and Can., 1889,

II, 1558; III, pls. 10, 13, 29, 66, 73.

Heteropterus marginatus, Harris, Ins. Inj., 1862, 308, fig. 131.

This, the smallest species of *Hesperidæ*, is a very common butterfly from mid-June until October. It is found hovering among the tall grasses and sedges which grow along the margins of ditches and ponds. There are three broods each season, and chrysalids from the last one hibernate.

THYMELICUS, Speyer.

72. (455.) *THYMELICUS POWESHIEK*, Park.

Thymelicus poweshiek, French, But. E. U. S., 1886, 301.

Oarisma poweshiek, Scudder, But. E. U. S. and Can., 1889, III,
1859.

A Western species, not before recorded east of Illinois. It occurs in small numbers about Whittings, Lake County.

PAMPHILA, Fabricius.

This genus of butterflies, which outranks all others in point of numbers, is represented in Indiana by twenty-two known species, the majority of which occur throughout the State.

Many species are usually overlooked by tyro collectors, as they are small in size, dull in color, and are usually seen at rest rather than in active motion. When disturbed, they fly low and but a short distance at a time, moving with a peculiar jerking flight similar to that of the *Neonymphas*. In repose the hind wings, instead of being folded above the body, are spread horizontally and meet the fore ones, which are also held in a peculiar position, so as to form a right angle.

But few are to be found before June 1, but about that time certain species become common among the tall, rank grasses and sedges which grow in damp places and upon which most of the larvæ feed. Others

are found abundantly in clover fields, and later on the flowers of thistles, ironweeds, marigolds, and other showy *Compositæ* attract them in large numbers.

73. (456.) *PAMPHILA MASSASOIT*, Scudd. The Mulberry Wing.

Pamphila massasoit, French, But. E. U. S., 1886, 302.

Poanes massasoit, Scudder, But. E. U. S. and Can., 1889, 1597;
III, pls. 10, 29, 37.

Ranges from New England to Nebraska, but noted in Indiana only in Lake County, where it is rare.

74. (457.) *PAMPHILA ZABULON*, Bd.-Lec. The Zabulon Skipper.
The Mormon.

Pamphila zabulon, Morris, Lep. N. A., 1862, 116.

French, But. E. U. S., 1886, 303, figs 82, 83.

Blatchley, Hoos. Nat., II, December, 1886, 62.

Atrytone zabulon, Scudder, But. E. U. S. and Can., II, 1617;
III, pls. 10, 13, 30, 66, 77. (All forms.)

74. (a.) *PAMPHILA ZABULON HOBOMOK*, Harris. Hobomok Skipper.

Hesperia hobomok, Harris, Ins. Inj., 1862, 313, fig. 137.

Morris, Lep. N. A., 1862, 110.

Packard, Guide, 1883, 269.

Pamphila zabulon hobomok, French, But. E. U. S., 1886, 303.

74. (b.) *PAMPHILA ZABULON QUADRAQUINA*, Scudder.

Pamphila zabulon quadraquina, French, But. E. U. S., 1886, 304.

Blatchley, Hoos. Nat., II, December, 1886, 62.

A variable and common species. The three varieties, whose synonymy is given above, are found in Indiana. Of these *zabulon* is by far the most common. Var. *hobomok* has been taken only in Decatur County. This is the first *Pamphila* to be seen in spring in Central Indiana, numerous specimens of *zabulon* having been taken from the flowers of violets on May 15, 1891. The female form *quadraquina* was seen a week later.

75. (466.) *PAMPHILA SASSACUS*, Harris. The Sassacus Skipper.

Hesperia sassacus, Harris, Ins. Inj., 1862, 315.

Morris, Lep. N. A., 1862, 110.

Pamphila sassacus, French, Sev. Rep. St. Ent. Ill., 1878, 159.

Id., But. E. U. S., 1886, 305.

Erynnis sassacus, Scudder, But. E. U. S. and Can., 1889, II,
1641; III, pls. 10, 30, 66, 73.

A common species in the northern part of the State, but not found as yet in the southern. The larvæ feed upon crab grass, *Panicum sanguinalis*, and the butterfly may be taken during June and the first half of July.

76. (491.) PAMPHILA HURON, Edw. The Huron Skipper. The Sachem.

Pamphila huron, French, Sev. Rep. St. Ent. Ill., 1878, 159.

Id., But. E. U. S., 1886, 312.

Blatchley, Hoos. Nat., II, December, 1886, 62.

Atalopedes huron, Scudder, But. E. U. S., II, 1661; III, pls. 17, 31, 77, 85.

A fairly common *Pamphila* throughout the State. On October 28, 1890, a large number were taken by the fingers from the heads of thistles. They seemed to be in a comatose condition, although the day was quite warm and pleasant. It is triple brooded, the imagoes appearing in May, July and September.

77. (493.) PAMPHILA PHYLÆUS. Drury. The Fiery Skipper.

P. phylæus, Morris, Lep. N. A., 1862, 118.

French, But. E. U. S., 1886, 313.

Hylephila phylæus, Scudder, But. E. U. S. and Can., 1889, II, 1630; III, pls. 17, 30, 77, 85.

A southern species, which in Indiana has been taken only in Jefferson County.

78. (499.) PAMPHILA OTHO EGEREMET, Scudd. The Otho Skipper.

Pamphila otho, French, Sev. Rep. St. Ent. Ill., 1878, 160.

Pamphila otho egeremet, French, But. E. U. S., 1886, 316.

Blatchley, Hoos. Nat., II, Dec. 1886, 62.

Thymelicus ætna, Scudder, But. E. U. S. and Can., 1889, II, 1696; III, pls. 10, 31, 77, 85.

In all parts of the State, but scarce and variable.

With us it flies from June 20 till mid-September, and frequents low, open meadows and roadsides.

79. (500.) PAMPHILA PECKIUS, Kirby. Peck's Skipper. The Yellow Spot.

Hesperia peckius, Harris, Ins. Inj., 1862, 315, fig. 139.

Pamphila peckius, French, Sev. Rep. St. Ent. Ill., 1878, 160.

Id., But. E. U. S., 1886, 317; fig. 84.

Blatchley, Hoos. Nat., II., Dec. 1886, 62.

Polites peckius, Scudder, But. E. U. S., 1889, II, 1683; III, pls. 10, 13, 31, 66, 80.

Pamphila peckii, Morris, Lep. N. A., 1862, 120.

Hesperia wamustta, Harris, Ins. Inj., 1862, 318, fig. 141.

Morris, Lep. N. A., 1862, 111.

Packard, Guide, 1883, 270.

The most common species of *Pamphila* throughout the State, and the one most frequently found in upland woods on the flowers of *Compositæ*. It flies from June till October, and winters as chrysalis or mature larva.

80. (504.) *PAMPHILA CERNE*, Bd.-Lec. The Cernes Skipper.

Pamphila cerne, French, Sev. Rep. St. Ent. Ill., 1878, 160.

Id., But. E. U. S., 1886, 320.

Blatchley, Hoos. Nat., II, 1886, 62.

Hesperia ahaton, Harris, Ins. Inj., 1862, 317, fig. 140.

Morris, Lep. N. A., 1862, 111.

Pamphila origenes, Morris, Lep. N. A., 1862, 117.

Pamphila thaumas, Morris, Lep. N. A., 1862, 119.

Pamphila arogos, Morris, loc. cit., 1862, 118.

Limochores taumas, Scudder, But. E. U. S., 1889, II, 1725; III, pls. 10, 13, 32, 66, 77, 85.

, Next to the preceding in abundance, and one of the prettiest of the genus. In this State it is on the wing from May 25 until October, and frequents open woods where flowers abound.

81. (505.) *PAMPHILA MANATAAQUA*, Scudd. The Cross Line Skipper.

Pamphila manataaqua, French, Sev. Rep. St. Ent. Ill., 1878, 160.

Id., But. E. U. S., 1886, 323.

Limochores manataaqua, Scudder, But. E. U. S. and Can., II, 1720; III, pls. 10, 32, 66, 73.

Hesperia cerne, Harris, Ins. Inj., 1862, 316.

Very common in the northern part of the State, but much less so in the southern, where it has been taken only in Vigo County.

82. (506.) *PAMPHILA VERNA*, Edw. The Vernal Skipper. The Little Glass Wing.

Pamphila verna, French, But. E. U. S., 1886, 324.

Euphyes verna, Scudder, But. E. U. S. and Can., II, 1742; III, pls. 10, 31, 66, 77.

Edwards records this species from Indiana, but gives no locality. It has been taken by Worthington in Lake County. Otherwise unknown in the State.

83. (507.) *PAMPHILA VESTRIS*, Bd.

Hesperia vestris, Morris, Lep. N. A., 1862, 109.

Pamphila vestris, French, But. E. U. S., 1886, 325.

Two males of this species are in the writer's collection, one of which was taken in Monroe, the other in Putnam County, both in the month of August, from the flowers of ironweed. One was sent to Edwards for verification, as it had been taken before only in California, Colorado and Florida.

84. (508.) PAMPHILA METACOMET, Harris. The Metacomet Skipper.
Hesperia metacomet, Harris, Ins. Inj., 1862, 317.
 Morris, Lep. N. A., 1862, 111.
Pamphila metacomet, French, Sev. Rep. St. Ent. Ill., 1878, 161.
 Id., But. E. U. S., 1886, 326.
 Blatchley, Hoos. Nat., II, Dec., 1886, 62.
Euphyes metacomet, Scudder, But. E. U. S. and Can., II, 1739;
 III, pls. 10, 31, 66.

Taken occasionally in all parts of the State, but scarce where found. The spots on the under side of the hind wing are wanting more often than they are present.

85. (510.) PAMPHILA ACCIUS, Sm.-Abb. The Accius Skipper. The Clouded Skipper.
Pamphila accius, French, But. E. U. S., 1886, 327.
 Blatchley, Hoos. Nat., II, December, 1886, 62.
Lerema accius, Scudder, But. E. U. S. and Can., II, 1768; III, pls. 17, 32, 66, 77, 85.

This is a species of southern range. It was taken by the writer in Monroe County on July 3, 1886, two worn specimens being secured.

86. (517.) PAMPHILA OCOLA, Edw. The Ocola Skipper.
Pamphila ocola, French, But. E. U. S., 1886, 332.
Prenes ocola, Scudder, But. E. U. S. and Can., 1889, III, p. 1866.

Recorded by Edwards as occurring at Whittings, Lake County, where Worthington has found it in small numbers.

87. (523) PAMPHILA BIMACULA, Gr.-Rob. The Bright Rayed Skipper.
Pamphila bimacula, French, But. E. U. S. 1886, 334.
Limochores bimacula, Scudder, But. E. U. S. and Can., II, 1718;
 III, pls. 10, 32.

Rather common in the northern part of the State, but not known to occur in the southern half. The butterflies may be taken on the wing during July and August, and are most frequently found in low, damp meadows.

88. (524.) PAMPHILA PONTIAC, Edw. The Pontiac Skipper. The Black Dash.
Pamphila pontiac, French, But. E. U. S., 1886, 335.
Limochores pontiac, Scudder, But. E. U. S. and Can., II, 1732;
 III, pls. 17, 32.

Taken in Jefferson and Lake counties, and, therefore, probably found throughout the State. It has a northern range, and Jefferson County is the most southern station at which it has been taken.

89. (525.) *PAMPHILA DION*, Edw. The Dion Skipper.
Pamphila dion, French, But. E. U. S., 1886, 337.
Limochores palatka, Scudder, But. E. U. S. and Can., 1889, III, p. 1863.

A northern butterfly recorded by Edwards, from Lake County, where it has been collected by Worthington.

90. (530.) *PAMPHILA DELAWARE*, Edw. The Delaware Skipper.
Pamphila delaware, French, But. E. U. S., 1886, 342.
Atrytone logan, Scudder, But. E. U. S. and Can., 1889, II, 1614; III, pls. 17, 80.

Noted in three widely separated counties, and probably it is to be found all over the State. Scarce.

91. (534.) *PAMPHILA OSYKA*, Edw. The Osyka Skipper.
Pamphila osyka, French, But. E. U. S., 1886, 345.
Euphyes osyka, Scudder, But. E. U. S. and Can., 1889, III, p. 1865.

Recorded by Edwards, from Whittings, Lake County. Locality verified by Worthington, who reports it rare.

92. (538.) *PAMPHILA FUSCA*, Gr.-Rob. The Dusky Skipper.
Pamphila fusca, French, But. E. U. S., 1886, 346.

A single specimen taken by the writer, in Monroe County, was referred to this species, and the identification was verified by Mr. Edwards, to whom it was sent. It has hitherto been collected only in the Gulf States.

93. (540.) *PAMPHILA HIANNA*, Scudd. The Hianna Skipper. The Dusted Skipper.
Pamphila hianna, French, But. E. U. S., 1886, 347.
Lerema hianna, Scudder, But. E. U. S. and Can., 1889, II, 1771; III, pls. 17, 32, 66, 77, 85.
 Lake County, Lagrange County. Rare. Not taken south.

94. (541.) *PAMPHILA VIATOR*, Edw. The Viator Skipper. The Broad-winged Skipper.
Pamphila viator, French, But. E. U. S., 1886, 347.
Phycamassa viator, Scudder, But. E. U. S. and Can., 1889, II, 1604; III, pls. 17, 30, 59.

Taken in Putnam and Lake Counties, but not elsewhere. Scarce. The habits and food plants are unknown.

AMBLYSIRTES, Speyer.

95. (542.) AMBLYSIRTES VIALIS, Edw. The Roadside Skipper.
Amblyscirtes vialis, French, Sev. Rep. St. Ent. Ill., 1878, 161.
 Id., But. E. U. S., 1886, 348.
 Blatchley, Hoos. Nat., II, Dec., 1886, 62.
 Scudder, But. E. U. S., 1889, II, 1582; III,
 pls. 10, 29, 66, 77, 85.

This neat little butterfly is frequent in the southern part of the State, but seems to be unknown in the northern. It is found from May 10 till September, along shady roads and fence rows, and is especially attracted by the flowers of ground ivy, *Nepeta glechoma*. The larvæ feed upon grass. There are often four anteapical dots on fore wings, instead of three, the number given in the descriptions cited above.

PYRGUS, Westwood.

96. (554.) PYRGUS TESSELLATA, Scud. The Tessellated Skipper.
Pyrgus tessellata, French, Sev. Rep. St. Ent. Ill., 1878, 161.
 Id., But. E. U. S., 1886, 352, fig. 86.
Syrichthus oilus, Morris, Lep. N. A., 1862, 121.
Hesperia montivago, Scudder, But. E. U. S. and Can., 1889, II,
 1536; III, pls. 15, 29, 77, 85.

This species should occur throughout the State, but has been taken only in Vigo and Jefferson Counties in the southern half. It appears most common in late fall, when it is found about the borders of streams and thickets. The food plants are different species of the *Malvaceæ*, as hollyhock and Indian mallow, and the winter is supposed to be passed in chrysalis.

NISONIADES, Speyer.

97. (561.) NISONIADES BRIZO, Bd.-Lec. The Brizo Skipper.
Thanaos brizo, Harris, Ins. Inj., 1862, 309, fig. 132.
 Scudder, But. E. U. S. and Can., II, 1500;
 III, pls. 9, 13, 28, 77, 85.
Nisoniades brizo, Morris, Lep. N. A., 1862, 114.
 French, But. E. U. S., 1886, 354.

Vigo and Lake counties. Probably throughout the State, but rare. Most commonly met with in midsummer and early fall in low ground meadows. The larvæ, according to Harris, feed upon leguminous plants, such as *Lathyrus*, or vetchling, and the ground nut, *Apios tuberosa*.

98. (562.) *NISONIADES ICELUS*, Lintn. The Dreamy Dusky Wing.
Nisoniades icelus, French, But. E. U. S., 1886, 355.
Thanaos icelus, Scudder, But. E. U. S. and Can., II, 1507;
 III, pls. 9, 28, 77, 85.

Frequent in the northern half of the State, but not yet taken in the southern. Habits same as preceding. Food plants, aspen, *Populus tremuloides*, and willow. It is single brooded and hibernates as a full fed larva in a nest which it forms from a leaf and lines with silk.

99. (564.) *NISONIADES LUCILIUS*, Lintn. Lucilius's Dusky Wing.
Thanaos lucilius, French, Sev. Rep. St. Ent. III., 1878, 161.
 Scudder, But. E. U. S. and Can., 1889, II,
 1458; III, pls. 9, 28, 77, 82.

Nisoniades lucilius, French, But. E. U. S., 1886, 357.

Putnam and Lake counties. Scarce. Probably elsewhere as its food plant, *Aquilegia canadensis*, or wild columbine, is found in all parts of the State. It winters as larva and the imago may be taken from May to September.

100. (565.) *NISONIADES PERSIUS*, Scudd. Persius's Dusky Wing.
Nisoniades persius, Mead, Rep. Wheeler Exp., V, 1875, 786.
 French, But. E. U. S., 1886, 359.
Thanaos persius, Scudder, But. E. U. S. and Can., 1889, II,
 1468; III, pls. 9, 28, 66, 77, 85.

Known to occur only in Lake County, but is probably present throughout. Food plants, willow and poplar.

"The butterfly is fond of alighting on wet sand, and may most frequently be found by shady roadsides, near woods. It flies with a strong, rapid movement, especially when disturbed, and seldom passes from one spot to an adjacent one without describing several irregular, rapid circles. At such a time it rarely rises more than two or three inches above the ground."—SCUDDER.

101. (569.) *NISONIADES MARTIALIS*, Scud. Martial's Dusky Wing.
Nisoniades martialis, French, But. E. U. S., 1886, 362.
Thanaos martialis, Scudder, But. E. U. S. and Can., 1889, II,
 1493; III, pls. 9, 28, 66, 77, 85.

A rather frequent species in most parts of the State. It may be taken in June and July, in high, open woods and copses.

102. (570.) *NISONIADES JUVENALIS*, Fab. Juvenal's Skipper.
Thanaos juvenalis, Harris, Ins. Inj., 1862, 309.
 French, Sev. Rep. St. Ent. III., 1878, 162.
 Scudder, But. E. U. S. and Can., II, 1476;
 III, pls. 9, 28, 77, 85.

Nisoniades juvenalis, Morris, Lep. N. A., 1862, 114.

French, But. E. U. S., 1886, 363.

Blatchley, Hoos. Nat., II, Dec. 1886, 62.

This seems to be the most common species of the genus within our limits, having been taken in all parts of the State. Its habits, and food plants, with the addition of oak, are essentially the same as those of *N. brizo*. It winters as larva, and there are two broods each season.

PHOLISORA, Speyer.

103. (580.) PHOLISORA CATULLUS, Fab. The Sooty Wing.

Nisoniades catullus, Morris, Lep. N. A., 1862, 115.

Pholisora catullus, Mead, Rep. Wheeler Exp., V. 1875, 787.

French, Sev. Rep. St. Ent. Ill., 1878, 162.

Id., But. E. U. S., 1886, 367, fig. 87.

Blatchley, Hoos. Nat., II, Dec., 1886, 62.

Scudder, But. E. U. S. and Can., 1889, II, 1519; III, pls. 9, 29, 66, 77, 85.

Very common in the southern counties, but less so north. Its favorite resorts are the damp, sandy places along streams where it may be taken in numbers from May to September.

The number, position, and size of the white spots on the fore wings vary exceedingly. The larvæ feed upon the various species of *Monarda*, *Chenopodium* and *Ambrosia*, and those of the second brood of the season hibernate in nests which they form of a folded leaf.

104. (583.) PHOLISORA HAYHURSTII, Edw. The Southern Sooty-wing.

Pholisora hayhurstii, French, But. E. U. S., 1886, 367.

Scudder, But. E. U. S. and Can., 1889, III, 1857.

Most common in southern counties, but found in small numbers throughout. Its habits are the same as those of the preceding. Food plant, unknown, but probably pigweed, *Chenopodium album*.

EUDAMUS, Swainson.

105. (588.) EUDAMUS PYLADES, Scud. The Northern Cloudy-wing.

Eudamus pylades, French, But. E. U. S., 1886, 368, fig. 88.

Thorybes pylades, Scudder, But. E. U. S. and Can., 1889, II, 1436; III, pls. 9, 13, 27, 66, 76, 85.

Eudamus bathyllus, Harris, Ins. Inj., 1862, 312, fig. 132.

Rather rare, but has been taken in four counties. It flies during June and July in meadows and along the edges of woods. Food plants, are clover, ground-nut, etc.

106. (590). *EUDAMUS BATHYLLUS*, Sm.-Abb. The Southern Cloudy-wing.

Hesperia bathyllus, Morris, Lep. N. A., 1862, 106.

Eudamus bathyllus, French, Sev. Rep. St. Ent. Ill., 1878, 162.

Id., But. E. U. S., 1886, 369.

Packard, Guide, 1883, 269.

Blatchley, Hoos. Nat., II, 1886, 62.

Thorybes bathyllus, Scudder, But. E. U. S. and Can., 1889, II, 1432; III, pls. 17, 27, 66, 76, 85.

Also a rare species, but probably found throughout. It frequents fence rows and thickets from May 15 to September, and has been taken in Monroe, Randolph and Lake counties. The larvæ feed upon different species of *Leguminosæ*.

107. (595.) *EUDAMUS LYCIDAS*, Sm.-Abb. The Hoary Edge.

Hesperia lycidas, Morris, Lep. N. A., 1862, 106.

Eudamus lycidas, French, Sev. Rep. St. Ent. Ill., 1878, 162.

Id., But. E. U. S., 1886, 370.

Blatchley, Hoos. Nat., II, December, 1886, 63.

Achalarus lycidas, Scudder, But. E. U. S. and Can., 1889, II, 1418; III, pls. 9, 27, 66, 76, 85.

Rather frequent throughout. Most common in brier patches and along the border of woods. May to September. The larvæ feed upon *Desmodium* and allied plants, and the winter is passed in chrysalis.

108. (599.) *EUDAMUS TITYRUS*, Fab. The Tityrus Skipper. The Silver Spot.

Eudamus tityrus, Harris, Ins. Inj., 1862, 310, figs. 133, 134, pl. V, fig. 1.

French, Sev. Rep. St. Ent. Ill., 1878, 163.

Id., But. E. U. S., 1886, 374, figs. 89, 90.

Packard, Guide, 1883, 269.

Blatchley, Hoos. Nat., II, Dec. 1886, 62.

Goniloba tityrus, Morris, Lep. N. A., 1862, 112.

Epargyreus tityrus, Scudder, But. E. U. S. and Can., 1889, II, 1399; III, pls. 9, 15, 27, 76, 82, 85.

Common in all parts of the State. The larvæ feed upon the leaves of many leguminous plants, chief among which is the common locust, and the butterfly may usually be found near those trees, or hovering over some bright colored flower in yard or garden. Another favorite resort is a clump of blackberry bushes, about which it will flit for hours on a hot day in midsummer. In Indiana it is single brooded, and hibernates in the chrysalis. In the spring of 1891 the first specimen was taken May

10, and from that date onward it was frequently seen, even in the streets of the city of Terre Haute.

* * *

Collectors should be on the lookout for the following species whose range, according to Edwards, includes Indiana or territory adjacent to Indiana, but which have not as yet been taken within the State:

1. *Terias mexicana*, Bd. Taken in Iowa and Illinois.
2. *Melitæa harrisii*, Scudd. New England to Wisconsin.
3. *Phyciodes batesii*, Peak. Ohio.
4. *Phyciodes carlota*, Peak. Southern and Western States. W. Va.
5. *Grapta faunus*, Edw. Atlantic to Pacific. (Northern range.)
6. *Limenitis dissippus floridensis*, Str. Illinois.
7. *Neonympha sosybius*, Fab. Mississippi Valley.
8. *Calephelis borealis*, Gr.-Rob. New York to Illinois.
9. *Thecla acadica*, Edw. Northern States.
10. *Thecla irus*, Godt. Atlantic and Western States.
11. *Thecla nippon*, Hub. Atlantic and Western States.
12. *Thecla leta*, Edw. Atlantic and Western States.
13. *Lycæna lygdamas*, Doubl. Michigan, Wisconsin to Georgia.
14. *Lycæna scudderii*, Edw. New York to Wisconsin.
15. *Lycæna striata*, Edw. Texas to Wisconsin.
16. *Carterocephalus omaha*, Edw. West Virginia to Colorado.
17. *Pamphila metea*, Scudd. New York to Colorado.
18. *Pamphila uncas*, Edw. Delaware to Dakota.
19. *Pamphila seminole*, Scudd. New York to Iowa.
20. *Pamphila leonardus*, Harr. New England to Kansas.
21. *Pamphila mystic*, Scudd. Wisconsin, Illinois and Michigan.
22. *Amblyscirtes samoset*, Scudd. Mississippi Valley.
23. *Pyrgus centaureæ*, Ramb. New York to Colorado.

JUNE 25, 1891.